

AMENDMENTS TO THE DRAWINGS

Applicants currently submit the attached replacement sheet to amend the left-most reference character "128" in FIG. 11 to read "127" in response to the objection to the drawings.

Attachment: Replacement Sheet

REMARKS

Claims 1, 3-10, and 12 are currently pending in this application. Claim 3 is currently amended. Claims 17-24 are added. Claims 4-8, 10, and 14-16 is canceled. Accordingly, claims 1, 3, 9, 12, and 17-24 will be pending after the entry of this amendment.

No new matter is added by virtue of the amendments here; support therefore is found throughout the specification, claims, and drawings as originally filed. Support for the amendment to claim 3 is found, for example, in original claims 3-8. Support for new claims 17-24 is found, for example, in original claim 1 and paragraph [0099] of the specification as published. The amendments to the specification and the drawings correct a clerical error and are implicit herein.

Applicants respectfully submit that the amendments herein may be properly entered at this time, *i.e.*, after final rejection pursuant to 37 CFR §1.116, because the amendments do not require a new search or raise any new issues, and the amendments reduce issues for appeal. Indeed, Applicants respectfully submit that the amendments herein place the application in condition for allowance. Thus, Applicants earnestly solicit entry of the amendments at this time.

Amendment of the claims herein is not to be construed as acquiescence to any of the objects/rejections set forth in the Office Action and was done solely to expedite prosecution. Applicants reserve the right to pursue the subject matter of the claims as originally filed or similar claims in this or one or more patent applications.

Objection to the Drawings

The Office Action objects to FIG. 11 because reference character "128" is used to designate two elements. Applicants respectfully submit corrected drawings to resolve this objection and amend the specification to reflect the corrected drawings.

35 U.S.C. § 112, ¶ 1

The Office Action rejects claims 1, 3-10, and 12 as allegedly lacking enablement under 35 U.S.C. § 112, ¶ 1. Specifically, while the Office Action acknowledges that the specification provides enablement for:

- a hydrophobic/hydrophilic structure, and

• transfer members placed adjacent to the bottom through-hole of a stack, the Office Action asserts that the specification “does not reasonably provide enablement” for:

- any spacing,
- any through-hole array structure, and
- addition of the fluid from the top of the stack or a stack arranged with the registration of the through-holes in a side to side configuration.

Applicants respectfully disagree with this rejection.

As discussed in MPEP § 2164, “it is not necessary to ‘enable one of ordinary skill in the art to make and use a perfected, commercially viable embodiment absent a claim limitation to that effect.’” MPEP § 2164, citing CFMT, Inc. v. Yieldup Int’l Corp., 349 F.3d 1333, 1338, 68 U.S.P.Q.2d 1940, 1944 (Fed. Cir. 2003). “As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, the enablement requirement of 35 U.S.C. 112 is satisfied.” MPEP § 2164.01(b).

Moreover, it is improper to reject a claim solely because one of skill in the art allegedly would have difficulty making or using unreasonable hypothetical embodiments of the claimed invention. As stated by Prof. Chisum, “A claim will not be invalidated as too broad if it reads on subject matter that is inoperative only on the basis of unreasonable assumptions without limitations that would be implied by one with ordinary skill in the art.” 3 Chisum § 7.03[7][c]. To state more colorfully,

Nearly all claims can be read on inoperative embodiments if one is deliberately setting out to sabotage the invention. To require that a process claim can be expressly limited to temperatures under 50,000 degrees [C], for example, because it wouldn’t work above that temperature (section 101) or because the applicant hasn’t been [sic] taught how to work it above that temperature (section 112) is absurd.

Paul M. Janicke, Patent Disclosure--Some Problems and Current Developments (Part II), 52 J. Pat. Off. Soc’y 757, 772-73 (1970), cited in 3 Chisum § 7.03[7][c].

Through-Hole Array Spacing

The Office Action asserts that the specification does not reasonably provide enablement for loading a plurality of liquid samples into a plurality of through-hole arrays including the step of stacking the plurality of through-hole arrays in registration,

wherein each the plurality of through-hole arrays is separated by a non-zero distance s . Specifically, the Office Action asserts that the minimum and maximum spacing sufficient to form a fluidic bridge “is not taught nor apparently recognized.”

Applicants respectfully assert that the determination of acceptable spacing dimensions is well within the purview of one of ordinary skill in the art. One of skill in the art will appreciate that the minimum spacing extends to the smallest dimension greater than zero. While there clearly is a spacing at which the claimed invention will no longer function effectively, such a dimension could easily be determined with minimal experimentation by one of skill in the art.

Moreover, one of skill in the art could mathematically calculate or estimate the maximal spacing, if desired, by using known fluid mechanics principles.

Accordingly, Applicants respectfully submit that the specification reasonably provides enablement for the claimed ranges of spacing.

Through-Hole Array Structures

The Office Action asserts that the specification does not reasonably provide enablement for loading a plurality of liquid samples into a plurality of through-hole arrays including the step of stacking the plurality of through-hole arrays in registration. Specifically, the Office Action asserts that the “hydrophobic/hydrophilic structure of the plate is required for the process to succeed.”

Applicants respectfully assert that the claimed invention is operable with or without the hydrophobic/hydrophilic structure. While the hydrophobic/hydrophilic structure certainly enhances the formation of fluidic bridges, capillary action is sufficient in some situations to support the transfer of fluids between spaced through-hole arrays in some embodiments. Moreover, undesired flow of liquid into adjacent through-holes can be prevented by increasing the through-hole spacing.

Accordingly, Applicants respectfully submit that the specification reasonably provides enablement for the loading of a plurality of through-hole arrays with or without a hydrophobic/hydrophilic structure.

Orientation of Stacked Through-Hole Arrays

The Office Action asserts that the specification does not reasonably provide enablement for loading a plurality of liquid samples into a plurality of through-hole arrays including the step of stacking the plurality of through-hole arrays in registration in

any orientation. Specifically, the Office Action asserts that the specification only enables a fluidic bridge between the through-hole being filled and the through-hole in the plate "above it."

Applicants respectfully assert that one of skill in the art would appreciate how to perform the claimed method to both (i) transfer liquid from the top of a stack of through-hole arrays to the bottom of the stack and (ii) transfer liquid horizontally across a stack of through-hole arrays. One of skill in the art would easily recognize that the through-hole array spacing and/or through-hole spacing can be modified, if necessary, to achieve loading at any orientation.

With respect to horizontal loading, one of skill in the art would appreciate that any tendency of the liquid samples to sag due to gravity can be countered by decreasing the spacing, augmenting the hydrophobicity of the platen surface, and/or increasing the surface tension of the liquid sample. Moreover, such concerns are mitigated when the method is practiced in a low-gravity setting such as outer space.

With respect to top-to-bottom loading, the through-hole array spacing can actually be increased as gravitational forces will stretch the nascent fluidic bridges to span a greater distance.

Accordingly, Applicants respectfully submit that the specification reasonably provides enablement for the loading of a plurality of through-hole arrays at any orientation.

For the reasons discussed above, Applicants request reconsideration and withdrawal of the rejection of claims 1, 3-10, and 12 under 35 U.S.C. § 112, ¶ 1.

In view of the foregoing, Applicants request reconsideration of all the rejections and allowance of the application with claims 1, 3, 9, 12, and 17-24 presented herein. If a telephone conversation with Applicants' representatives would be helpful to expedite prosecution of the application, Applicants urge the Examiner to telephone the undersigned at the number indicated below.

Applicants believe that no fees or extensions are required for consideration of this Amendment and Response. However, if for any reason the authorized fee is inadequate, the Office is conditionally authorized and requested to charge Deposit

Account No. **04-1105** under order number 65689CPDV(43382). Also, the Office should consider this a conditional petition for the proper extension period needed to have this response entered and considered, if any.

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Respectfully submitted,

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